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A Summary of Reports Concerning the Committee on Engineering Schools of the ngineers' Council for Professional Development

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Supplement to

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I

ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT

Organization and Program

Engineers' Council for Professional Development was organized in 1932 for the express purpose of improving the status of the engineering profession. To this end the Council has inaugurated a program dealing with the selection, guidance, training and certification of the members of the profession. This program is being carried out under the direction of four operating committees. One of these, the Committee on Engineering Schools, is expected, as part of its broad purpose of assisting in the enhancement of the status of engineering education "to formulate criteria for colleges of engineering, which will insure to their graduates a sound educational background for practicing the engineering profession." A specific duty assigned to the committee is the inspection of engineering colleges with a view to the accrediting of curricula offered by them.

After a thorough study of accrediting methods of other agencies the committee formulated a statement of principles and a procedure in accordance with which its program would be carried out. This program was inaugurated in November, 1935. Since then the first stage of the work has been virtually completed and was reported upon by the committee to the Annual Meeting of E. C. P. D., held on October 6, 1936.

The accrediting program is being conducted under authorization to function as the agency of the several groups constituting E. C. P. D.: American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Institute of Chemical Engineers, the Society for the Promotion of Engineering Education, and the National Council of State Boards of Engineering Examiners.

The statement of principles in accordance with which recommendations as to accrediting are prepared is as follows:

Basis for Accrediting

1. Purposes of accrediting shall be to identify those institutions which offer professional curricula in engineering worthy of recognition as such.

2. Accrediting shall apply only to those curricula which lead to degrees.

3. Both undergraduate and graduate curricula shall be accredited. (Accrediting of graduate curricula deferred until a later date.)

4. Curricula in each institution shall be accredited individually. For this purpose, E. C. P. D. will recognize the six major curricula: Chemical, Civil, Electrical, Mechanical, Metallurgical, and Mining Engineering—represented in its own organization, and such other curricula as are warranted by the educational and industrial conditions pertaining to them.

5. Curricula shall be accredited on the basis of both qualitative and quantitative criteria.

6. Qualitative criteria shall be evaluated through visits of inspection by a committee or committees of qualified individuals representing E. C. P. D.

7. Quantitative criteria shall be evaluated through data secured from catalogues and other publications, and from questionnaires.

8. Qualitative criteria shall include the following:

I. Qualifications, experience, intellectual interests, attainments and professional productivity of members of the faculty.
II. Standards and quality of instruction.
    a. In the engineering departments.
    b. In the scientific and other coöperating departments in which engineering students receive instruction.
III. Scholastic work of students.
IV. Records of graduates both in graduate study and in practice.
V. Attitude and policy of administration towards its engineering division and toward teaching, research and scholarly production.

9. Quantitative criteria shall include the following:

I. Auspices, control and organization of the institution and of the engineering division.
II. Curricula offered and degrees conferred.
III. Age of the institution and of the individual curricula.
IV. Basis of and requirements for admission of students.
V. Number of students enrolled.
    a. In the engineering college or division as a whole.
    b. In the individual curricula.
VI. Graduation requirements.
VII. Teaching staff and teaching loads.
VIII. Physical facilities. The educational plant devoted to engineering education.
IX. Finances: investments, expenditures, sources of income.

The purpose of E. C. P. D. is to substitute a single accrediting for the uncoördinated methods that have been used in the past. E. C. P. D., representing the national engineering societies, the state licensing boards, and the colleges of engineering, is the only agency that can accredit colleges under properly inclusive auspices. As a not unimportant incidental advantage, accrediting by this one agency will avoid the needless duplications of present procedures.

E. C. P. D. is merely authorized by its constituent organizations to publish a list of accredited colleges for use by those agencies which require such a list. It has no authority to impose any restrictions or standardizations upon engineering colleges, nor does it desire to do so. On the contrary, it aims to preserve the independence of action of individual institutions and to promote the general advancement of engineering education thereby.

Accrediting of curricula offered by institutions will be upon invitation of the institution.

Final decision as to accrediting of each institution rests with the Engineers' Council for Professional Development which will pass upon the recommendations made to it by the Committee on Engineering Schools.

The membership of the E. C. P. D. Committee on Engineering Schools comprises the following individuals:

Karl T. Compton, Massachusetts Institute of Technology, *Chairman*, representing American Institute of Electrical Engineers.

H. P. Hammond, Polytechnic Institute of Brooklyn, *Vice Chairman*, representing Society for the Promotion of Engineering Education.

G. M. Butler, University of Arizona, representing American Institute of Mining and Metallurgical Engineers.

Ivan C. Crawford, University of Idaho, representing American Society of Civil Engineers.

Harry A. Curtis, Tennessee Valley Authority, representing American Institute of Chemical Engineers.

P. H. Daggett, Rutgers University, representing National Council of State Boards of Engineering Examiners.

A. A. Potter, Purdue University, representing American Society of Mechanical Engineers.

II

REPORT TO THE SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION

As one of the representatives of the Society for the Promotion of Engineering Education on E. C. P. D., Professor H. P. Hammond made the following report on the accrediting program to the Society at the 44th Annual Meeting at the University of Wisconsin, June 22–26, 1936.

"During the year the work of the Committee has been devoted entirely to the program of accrediting of undergraduate curricula of degree-conferring engineering schools. Thus far the program of inspection has been confined to two of the seven regions into which the country has been divided: Region I, the New England States; and Region II, the Middle States and Maryland. It was in these two regions that E. C. P. D. was authorized by its constituent societies to launch its accrediting program on a trial basis before inaugurating it in other sections of the country.

"The program was launched in June, 1935, by letter of notification advising the degree-conferring institutions in the two regions that E. C. P. D. was prepared, upon invitation, to appraise undergraduate curricula with a view to accrediting. The basis of evaluation and the principles upon which lists of accredited curricula would be prepared, as well as the procedures to be followed in visiting and inspecting the institutions, have been reported to the Society previously at the Atlanta meeting.

"The first stage of the accrediting program has now been virtually completed so far as the visits of inspection and evaluation of statistical information is concerned in Regions I and II. Forty institutions in these regions have applied for consideration of their undergraduate curricula and all but one of which have now been visited, that one having submitted its application so late that the visit has been postponed to next autumn. All but four of the degree-conferring schools of these regions are included in the forty. Of the remaining four, two are in New England and two in the Middle States and Maryland. One of these does not offer undergraduate curricula and hence does not fall within the scope of the program; one offers a single curriculum in a special field; and one, it is understood, is merely deferring action.

"The first visits of inspection were made in November, 1935, by the full membership of the Committee on Engineering Schools. Early in 1936 the two regional committees were organized and began their work. The last visits were made in May and complete reports on all schools and curricula have now been prepared. The membership of the two Committees is as follows:

Region I, New England

"Representing the Society for the Promotion of Engineering Education: D. C. Jackson,* R. E. Doherty, G. W. Case.

"Representing the American Society of Civil Engineers: G. W. Case and C. W. Sherman.

"Representing the American Institute of Electrical Engineers: D. C. Jackson,* R. E. Doherty, E. L. Moreland.

"Representing the American Society of Mechanical Engineers: S. W. Dudley, H. R. Westcott.

"Representing the American Institute of Mining and Metallurgical Engineers: C. H. Mathewson and G. B. Waterhouse.

"Representing the American Institute of Chemical Engineers: B. F. Dodge and W. G. Whitman.

"H. P. Hammond, Chairman: representing the National Council of State Boards of Engineering Examiners; Member, E. C. P. D. Committee on Engineering Schools.

Region II, Middle States and Maryland

"Representing the S. P. E. E.: D. S. Kimball, E. A. Holbrook, Louis Mitchell.

"Representing Am. Soc. C. E.: Louis Mitchell, J. P. H. Perry, J. K. Finch.

"Representing A. S. M. E.: E. F. Church, Jr., D. S. Kimball, Herman Diederichs.

"Representing A. I. E. E.: A. M. Dudley, O. W. Eshbach.

"Representing A. I. M. E.: E. A. Holbrook and T. T. Read.

"Representing A. I. Ch. E.: H. C. Parmelee, W. N. Jones, A. B. Newman.

"Representing N. C. S. B. E. E.: J. W. Barker, F. O. X. McLoughlin.

"Karl T. Compton, Chairman: Member, E. C. P. D. Committee on Engineering Schools.

"Reports prepared by these committees will be considered by the Committee on Engineering Schools at a meeting to be held on June 26 to 28, 1936, inclusive, and final recommendations will be prepared at that meeting for presentation to E. C. P. D., presumably at its annual meeting in October, 1936. These recommendations will take one of the following forms:

"1. To include the curriculum in question on the E. C. P. D. list of accredited curricula.

"2. To defer action, or to include the curriculum on the list when, or if, improvements are effected.

"3. Not to include the curriculum on the list. It is expected that the E. C. P. D. list of accredited curricula of institutions in Regions I and II will be made public shortly after the October meeting. Until then the results of the work to date cannot be made known.

"As a particular phase of the procedure to date it should be explained that recommendations as to curricula in Chemical Engineering based upon reports of the representatives listed above will be submitted to the Committee on Engineering Schools of E. C. P. D. by the Committee on Chem-

* Professor Jackson was out of the country during the past year and was therefore not able to participate in any of the accrediting program.

ical Engineering Education of the American Institute of Chemical Engineers. All visits of inspection of curricula not previously accredited by A. I. Ch. E. were made concurrently with the general inspections of other curricula and the committees have functioned throughout as a single unit in each region. The Committee on Engineering Schools is recommending to E. C. P. D. for inclusion in its list of accredited curricula all curricula in Chemical Engineering previously approved by the American Institute of Chemical Engineers.

"The program of accrediting in the other five regions was launched within the past two months in the same manner as in Regions I and II, by notification to the institutions that upon invitation E. C. P. D. is prepared to consider curricula submitted with a view to accrediting. Active prosecution of the program will begin in the autumn. Institutions in Regions I and II that have not previously invited inspection will also be considered during the next academic year upon their request. It is expected that the first comprehensive stage of E. C. P. D. program will be completed by June, 1937, and that the list of accredited curricula for all regions will be published by October of that year.

"In concluding this report it may be of interest briefly to summarize certain results and impressions of the accrediting program as conducted thus far:

"Of primary importance to the general welfare of engineering education, it is evident that the accrediting program can be, and has been thus far, of direct benefit in bringing about improvements in a considerable number of the institutions. These benefits have resulted from recommendations, based upon the inspection and evaluation of assembled data, looking to improvements or additions to staff or facilities, changes in curricula, etc. In some instances such changes or improvements have been made a definite condition precedent to the submission of a favorable report on accrediting. In others they have been made as the result of informal suggestions and recommendations. In either case the recommendations have had prompt and, in some cases, salutary results. In every case we believe they have been constructive.

"It is our belief also that the basis of valuation, which is largely founded on appraisal of quality of work and of standards rather than on fixed quantitative criteria, and is thereby more difficult to apply than the older and more rigidly limiting basis of valuation, has, nevertheless, provided the means of making accurate valuations. We feel that the list of accredited curricula, when published, will be recognized as a properly discriminating one."

III

LIST OF ACCREDITED CURRICULA OFFERED BY COLLEGES IN REGIONS I AND II

The following list of accredited curricula was adopted by Engineers' Council for Professional Development, on recommendation of the Committee on Engineering Schools, at its meeting of

October 6, 1936. Three institutions in Regions I and II made application to E. C. P. D. for consideration of their curricula at such a late date that inspections could not be made prior to the meeting at which the following list was adopted. Curricula of these institutions and of any others in these regions that may apply in the near future will be considered during the current academic year and such of their curricula as may be accredited will be published with the list to appear in the fall of 1937.

List of Accredited Undergraduate Curricula

(*A*) Arranged by Institutions
(*B*) Arranged by Curricula

(*as of 1936 and subject to continual revision*)

Includes institutions in the following states only: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

(*A*) *Arranged by Institutions*

1. Brown University	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
2. Carnegie Institute of Technology	Chemical Engineering (*c*)
	Civil Engineering (*a*)
	Electrical Engineering (*a*)
	Management Engineering (*a*)
	Mechanical Engineering (*a*)
	Metallurgical Engineering (*a*)
3. Clarkson College of Technology	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
4. College of the City of New York	Civil Engineering (*a*)
	Electrical Engineering (*a*)
5. Columbia University	Chemical Engineering (*b*)
	Civil Engineering (*b*)
	Electrical Engineering (*b*)
	Industrial Engineering (*b*)
	Mechanical Engineering (*b*)
	Metallurgical Engineering (*b*)
	Mining Engineering (*b*)
6. Cooper Union Institute of Technology	Civil Engineering (*c*)
	Electrical Engineering (*c*)
	Mechanical Engineering (*c*)
7. Cornell University	Administrative Engineering
	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
8. Dartmouth College	Civil Engineering
9. University of Delaware	Civil Engineering
	Electrical Engineering
	Mechanical Engineering

10. Drexel Institute	Chemical Engineering (*d*)
	Civil Engineering (*d*)
	Electrical Engineering (*d*)
	Mechanical Engineering (*d*)
11. Johns Hopkins University	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
12. Lafayette College	Civil Engineering
	Electrical Engineering
	Mechanical Engineering (Technical Option)
	Metallurgical Engineering
	Mining Engineering
13. University of Maine	Civil Engineering
	Electrical Engineering
	General Engineering
	Mechanical Engineering
14. Massachusetts Institute of Technology	Aeronautical Engineering
	Architectural Engineering
	Business and Engineering Administration
	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Electrochemical Engineering
	General Engineering
	Mechanical Engineering
	Metallurgy
	Mining Engineering
	Naval Architecture and Marine Engineering
	Sanitary Engineering
15. University of New Hampshire	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
16. New York University	Aeronautical Engineering (*c*)
	Chemical Engineering
	Civil Engineering (*c*)
	Electrical Engineering (*c*)
	Mechanical Engineering (*c*)
17. Newark College of Engineering	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
18. Norwich University	Civil Engineering
	Electrical Engineering
19. Pennsylvania State College	Architectural Engineering
	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Electrochemical Enginering
	Industrial Engineering
	Mechanical Engineering
	Sanitary Engineering

20. University of Pittsburgh	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Industrial Engineering
	Mechanical Engineering
	Metallurgical Engineering
	Mining Engineering
	Petroleum Engineering
21. Polytechnic Institute of Brooklyn	Chemical Engineering (*e*)
	Civil Engineering (*a*)
	Electrical Engineering (*a*)
	Mechanical Engineering (*a*)
22. Princeton University	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
23. Rensselaer Polytechnic Institute	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
24. Rhode Island State College	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
25. University of Rochester	Mechanical Engineering
26. Rutgers University	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
	Sanitary Engineering
27. Stevens Institute of Technology	General Engineering
28. Swarthmore College	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
29. Syracuse University	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
30. Tufts College	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
31. Union College	Civil Engineering
	Electrical Engineering
32. University of Vermont	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
33. Webb Institute of Naval Architecture	Naval Architecture and Marine Engineering
34. Worcester Polytechnic Institute	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
35. Yale University	Chemical Engineering
	Civil Engineering
	Electrical Engineering
	Mechanical Engineering
	Metallurgical Engineering

(B) Arranged by Curricula

Aeronautical Engineering
- Massachusetts Institute of Technology
- New York University (*e*)

Architectural Engineering
- Massachusetts Institute of Technology
- Pennsylvania State College

Chemical Engineering (*f*)
- Carnegie Institute of Technology (*e*)
- Columbia University (*b*)
- Cornell University
- Drexel Institute (*d*)
- Massachusetts Institute of Technology
- New York University
- Pennsylvania State College
- University of Pittsburgh
- Polytechnic Institute of Brooklyn (*e*)
- Princeton University
- Rensselaer Polytechnic Institute
- Yale University

Civil Engineering
- Brown University
- Carnegie Institute of Technology (*a*)
- Clarkson College of Technology
- College of the City of New York (*a*)
- Columbia University (*b*)
- Cooper Union Institute of Technology (*c*)
- Cornell University
- Dartmouth College
- University of Delaware
- Drexel Institute (*d*)
- Johns Hopkins University
- Lafayette College
- University of Maine
- Massachusetts Institute of Technology
- University of New Hampshire
- New York University (*e*)
- Newark College of Engineering
- Norwich University
- Pennsylvania State College
- University of Pittsburgh
- Polytechnic Institute of Brooklyn (*a*)
- Princeton University
- Rensselaer Polytechnic Institute
- Rhode Island State College
- Rutgers University
- Swarthmore College
- Syracuse University
- Tufts College
- Union College
- University of Vermont
- Worcester Polytechnic Institute

Yale University

Electrical Engineering

Brown University
Carnegie Institute of Technology (*a*)
Clarkson College of Technology
College of the City of New York (*a*)
Columbia University (*b*)
Cooper Union Institute of Technology (*c*)
Cornell University
University of Delaware
Drexel Institute (*d*)
Johns Hopkins University
Lafayette College
University of Maine
Massachusetts Institute of Technology
University of New Hampshire
New York University (*c*)
Newark College of Engineering
Norwich University
Pennsylvania State College
University of Pittsburgh
Polytechnic Institute of Brooklyn (*a*)
Princeton University
Rensselaer Polytechnic Institute
Rhode Island State College
Rutgers University
Swarthmore College
Syracuse University
Tufts College
Union College
University of Vermont
Worcester Polytechnic Institute
Yale University

Electrochemical Engineering

Massachusetts Institute of Technology
Pennsylvania State College

General Engineering

University of Maine
Massachusetts Institute of Technology
Stevens Institute of Technology

Industrial Engineering

Carnegie Institute of Technology (Management Engineering) (*a*)
Columbia University (*b*)
Cornell University (Administrative Engineering)
Massachusetts Institute of Technology (Business and Engineering Administration)
Pennsylvania State College
University of Pittsburgh

Mechanical Engineering

Brown University
Carnegie Institute of Technology (*a*)
Clarkson College of Technology
Columbia University (*b*)
Cooper Union Institute of Technology (*c*)

Cornell University
University of Delaware
Drexel Institute (*d*)
Johns Hopkins University
Lafayette College (Technical Option)
University of Maine
Massachusetts Institute of Technology
University of New Hampshire
New York University (*c*)
Newark College of Engineering
Pennsylvania State College
University of Pittsburgh
Polytechnic Institute of Brooklyn (*a*)
Princeton University
Rensselaer Polytechnic Institute
Rhode Island State College
University of Rochester
Rutgers University
Swarthmore College
Syracuse University
Tufts College
University of Vermont
Worcester Polytechnic Institute
Yale University

Metallurgical Engineering

Carnegie Institute of Technology (*a*)
Columbia University (*b*)
Lafayette College
Massachusetts Institute of Technology (Metallurgy)
University of Pittsburgh
Yale University

Mining Engineering

Columbia University (*b*)
Lafayette College
Massachusetts Institute of Technology
University of Pittsburgh

Naval Architecture and Marine Engineering

Massachusetts Institute of Technology
Webb Institute of Naval Architecture

Petroleum Engineering

University of Pittsburgh

Sanitary Engineering

Massachusetts Institute of Technology
Pennsylvania State College
Rutgers University

Explanatory Notes

Note: Following is a list of specialized curricula upon which action has been deferred pending completion of the accrediting program throughout the country:

Building Engineering and Construction
Gas Engineering
Mineral Dressing
Paper and Pulp Technology
Petroleum Refining
Public Health Engineering

E. C. P. D. also has under consideration at this time curricula at certain institutions in these states for which the sub-committees of inspection are not yet prepared to submit specific recommendations with regard to accrediting. It is expected that these recommendations will be ready for action by the Council early in 1937.

Footnotes:

(*a*) Accrediting applies to both the day and evening curricula.

(*b*) Accrediting applies to the four-year and five-year curricula leading to the Bachelor of Science Degree.

(*c*) Accrediting applies to day curriculum only. Action on evening curricula in which the quantitative requirements differ materially from the usual day curricula has been deferred pending further study by a special sub-committee of the E. C. P. D. Committee on Engineering Schools.

(*d*) Accrediting applies to the five-year coöperative curriculum.

(*e*) E. C. P. D. has not received from its sub-committee on Chemical Engineering any recommendations with respect to evening curricula in chemical engineering.

(*f*) Institutions offering several curricula in engineering and for which E. C. P. D. has received recommendations only in respect to chemical engineering have not been included in this preliminary list.

IV

PROGRAM OF COMMITTEE ON ENGINEERING SCHOOLS FOR 1936–1937

In accordance with authorization given by its constitutent bodies E. C. P. D., through its Committee on Engineering Schools, will continue the work of visiting engineering colleges during the current academic year and expects to complete the major portion of its program before the close of the year. Institutions in Regions III to VII inclusive were notified in March, 1936, that E. C. P. D. was prepared, upon invitation, to visit and inspect the schools with a view to considering curricula submitted for accrediting. Of the 109 institutions in these regions that are known to confer degrees in engineering, 61 had requested inspection by September 1st, 1936, making 103 institutions in all—including those in Regions I and II—that have submitted requests. Visits to these institutions will be made during the year, beginning about November 1st or shortly thereafter. During the same period institutions in Regions I and II whose requests for investigation were received too late for consideration last year will also be considered. It is expected that a list of accredited curricula covering all the institutions in the country that have applied to E. C. P. D. will be published in the fall of 1937.

The following lists give the names of the members of all delegatory committees of E. C. P. D.

Requests for further information as to E. C. P. D.'s work in the accrediting program should be addressed to H. H. Henline,

Secretary, Engineers' Council for Professional Development, 29 West 39th Street, New York, N. Y.

Personnel of Committees of Inspection

American Society of Civil Engineers

G. W. Case, University of New Hampshire, Durham, N. H.
L. E. Conrad, Kansas State College, Manhattan, Kans.
H. S. Crocker, Cons. Engineer, Denver, Colo.
G. J. Davis, University of Alabama, Tuscaloosa, Ala.
Donald Derickson, Tulane University, New Orleans, La.
N. W. Dougherty, University of Tennessee, Knoxville, Tenn.
C. L. Eckel, University of Colorado, Boulder, Colo.
Joseph Jacobs, Cons. Engineer, Seattle, Wash.
Anson Marston, Iowa State College, Ames, Ia.
Louis Mitchell, Syracuse University, Syracuse, N. Y.
C. A. Mockmore, Oregon State College, Corvallis, Ore.
J. P. H. Perry, Turner Construction Co., New York, N. Y.
C. W. Sherman, Metcalf & Eddy, Boston, Mass.
R. B. Wiley, Purdue University, Lafayette, Ind.

American Institute of Mining and Metallurgical Engineers

A. C. Callen, University of Illinois, Urbana, Ill.
Jay A. Carpenter, Mackay School of Mines, Reno, Nev.
J. R. Cudworth, University of Alabama, Tuscaloosa, Ala.
D. J. Demorest, Ohio State University, Columbus, O.
C. H. Fulton, Missouri School of Mines, Rolla, Mo.
E. A. Holbrook, University of Pittsburgh, Pittsburgh, Pa.
C. E. Lawall, West Virginia University, Morgantown, W. Va.
Robert S. Lewis, University of Utah, Salt Lake City, Utah
C. H. Mathewson, Yale University, New Haven, Conn.
T. T. Read, Columbia University, New York, N. Y.
Milnor Roberts, University of Washington, Seattle, Wash.
Francis A. Thomson, Montana State School of Mines, Butte, Mont.
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American Society of Mechanical Engineers

B. M. Brigman, University of Louisville, Louisville, Ky.
E. F. Church, Jr., Polytechnic Institute of Brooklyn, Brooklyn, N. Y.
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J. H. Felgar, Univ. of Oklahoma, Norman, Okla.
J. W. Haney, University of Nebraska, Lincoln, Neb.
W. A. Hanley, Eli Lilly & Co., Indianapolis, Ind.
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D. B. Prentice, Rose Polytechnic Institute, Terre Haute, Ind.
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Baldwin M. Woods, University of California, Berkeley, Calif.

American Institute of Electrical Engineers

F. C. Bolton, Agri. & Mech. College of Texas, College Station, Texas
H. V. Carpenter, Washington State College, Pullman, Wash.
R. E. Doherty, Carnegie Institute of Technology, Pittsburgh, Pa.
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O. W. Eshbach, A. T. & T. Co., New York, N. Y.
H. S. Evans, University of Colorado, Boulder, Colo.
O. J. Ferguson, University of Nebraska, Lincoln, Neb.
W. E. Freeman, University of Kentucky, Lexington, Ky.
C. F. Harding, Purdue University, Lafayette, Ind.
D. C. Jackson, Massachusetts Institute of Technology, Cambridge, Mass.
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A. D. Moore, University of Michigan, Ann Arbor, Mich.
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R. W. Sorensen, California Institute of Technology, Pasadena, Calif.

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C. H. Fulton, Missouri School of Mines, Rolla, Mo.
C. F. Harding, Purdue University, Lafayette, Ind.
E. A. Holbrook, University of Pittsburgh, Pittsburgh, Pa.
D. C. Jackson, Massachusetts Institute of Technology, Cambridge, Mass.
D. S. Kimball, Cornell University, Ithaca, N. Y.
C. A. Mockmore, Oregon State College, Corvallis, Ore.
D. B. Prentice, Rose Polytechnic Institute, Terre Haute, Ind.
R. A. Seaton, Kansas State College, Manhattan, Kans.
R. W. Sorensen, California Institute of Technology, Pasadena, Calif.

American Institute of Chemical Engineers

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W. L. Beuschlein, University of Washington, Seattle, Wash.
B. F. Dodge, Yale University, New Haven, Conn.
R. C. Ernst, University of Louisville, Louisville, Ky.
W. N. Jones, Carnegie Institute of Technology, Pittsburgh, Pa.
C. A. Mann, University of Minnesota, Minneapolis, Minn.
P. D. V. Manning, Cons. Engineer, Berkeley, Calif.
R. S. McBride, Cons. Engineer, Washington, D. C.
A. B. Newman, Cooper Union Institute of Technology, Brooklyn, N. Y.
H. C. Parmelee, McGraw Hill Publishing Co., New York, N. Y.
W. A. Schmidt, Western Precipitation Co., Los Angeles, Calif.
A. H. White, University of Michigan, Ann Arbor, Mich.
W. G. Whitman, Massachusetts Institute of Technology, Cambridge, Mass.
C. S. Williamson, Jr., Tulane University, New Orleans, La.

National Council of State Boards of Engineering Examiners

J. W. Barker, Columbia University, New York, N. Y.
I. C. Crawford, University of Idaho, Moscow, Idaho
P. H. Daggett, Rutgers University, New Brunswick, N. J.
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